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ABSTRACT

This list of environmental education programs was compiled to assist Pennsylvania school administrators in the development of their K-12 environmental programs. The publication is a directory of school district programs and college and university programs. The list also includes programs offered by four environmental or nature learning centers in the state. Each program is briefly described and the names and addresses of each of the directors is listed. (AJ)

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PENNSYLVANIA PROGRAMS/ACTIVITIES IN ENVIRONMENTAL EDUCATION

January, 1977

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SE 022 478

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The publication **Pennsylvania Programs/Activities in Environmental Education** has been compiled to assist Commonwealth school administrators in the development of their K-12 environmental education program.

Three sections are represented:

.Commonwealth school district programs
.College/university programs
.Environmental learning centers nature centerss

Included are ongoing school district environmental education programs along with the human and physical resources which can supplement curriculum development.

Pennsylvania educational community has steadily contributed to the growth of environmental education programs. Current curriculum regulations mandate that environmental education shall be a part of the instructional program of every school. This instructional program can be presented as a separate course or integrated into all subject areas.

Integration of environmental education concepts into all subjects is the more difficult process, but it is the more realistic approach to a good program. To achieve integration requires the interaction of faculty with administrators in the development of a new approach to teaching about the relationships of human beings to their environment.

COMMONWEALTH SCHOOL DISTRICT PROGRAMS

Admiral Peary Area Vocational-Technical School
Route 422 W., R.D. 2
Ebensburg, PA 15931

Bryan V. Fluck, Executive Director

Program Description

The program is now presented at the elementary level. Starting these students to think positively about the environment and keeping it natural constitute the first objective. The attainment of other objectives will be less complicated and more effective.

Stimulating elementary school children has been the hardest but most rewarding experience offered these children, who are involved in a constant learning and sharing situation. As they learn more modern technical ways to preserve our natural resources, they will share them with everyone they come in contact with. By starting at the elementary level, the program is instilling a learning experience that will last forever. This is something no one can take from them but something they can share. Also, by using paraprofessionals trained in environmental education, we are educating further generations to take over and put to use what they were taught. Therefore, they can restore much of the environment to its natural habitat.

Connellsville Area School District
Connellsville, PA 15425

Perry S. Culver
Supervisor of Curriculum and Instruction

Program Description

Environmental education activities and studies are now intergrated into logical topics at all grade levels when they are appropriate to all major areas of study.

Outdoor areas are used for class study and teacher demonstrations.

Project Humane, initiated in 1972 and running through 1975, provided teachers in-service on activities in the neighborhood environment that develops a humane attitude toward humans and nature.

Eastern Lancaster County School District
Route 23 S. Tower Road
New Holland, PA 17557

Robert D. Herr, Chairman
Agriculture Department

Program Description

Elementary Agriculture Program, stressing safety, sanitation and conservation is offered to all 6th grade students in the Eastern Lancaster County schools. Included in this program is also a coordinator working in the K-5 grades on a request basis on strictly environmental and career help, resource persons and information. The 6th grade program description is enclosed. Involved are 350 students.

Environmental Agriculture Program, offered as an elective to students in grades 9 thru 12, deals with various environmental oriented topics. It was offered on a two-year basis for the past three years; but starting next year it will be offered on a 3 year basis. It involves 200 students.

Junior Agriculture Club (7th and 8th grades) is an elective program that includes a heavy curriculum of conservation and ecology subjects. Approximately 250 students are involved.

Fishing Creek Elementary School
West Shore School District
Box 95, R. D. 2
Lewisberry, PA 17339

Ronald R. Shuey, Principal

Program Description

This school participates in the West Shore School District's environmental study activities directed by Fred Howard. There is a nature center at the school as well as a 26 acre site which includes woodland, natural acreage, marshes and fresh water streams. In addition, the school has use of a neighbor's pond and marshes.

All this lends itself to a variety of teacher-led activities at all grade levels: water ecology, life cycles, plant identification, interdependence of species, soil and water conservation, etc. Much interdisciplinary work is evidenced through language arts, mathematics, physical education and art.

Fox Chapel Area School District
611 Field Club Road
Pittsburgh, PA 15238

Beulah A. Frey, Coordinator
Outdoor and Environmental Education

Program Description

One of the most difficult and distinctive tasks of Fox Chapel's environmental program involves the integration of massive amounts of environmental information into the curriculum. Two integration tools which we have adopted are the *spiral* and *transdisciplinary* approaches. Financial help has come from federal Title III grants, which have funded the *environmental transdisciplinary involvement program* for three years on a decreasing basis.

The transdisciplinary program is a relatively new phase of the district's environmental program. Aimed initially at first and second graders, it now includes grades K through six and is designed to teach ecology by a *spiral* approach. The spiral describes the effect of a young student accumulating facts and feelings about the environment as he/she goes from grade to grade. The curriculum not only involves the identification of environmental problems but demonstrates ways that youngsters can be agents of change at any age.

Harrisburg City Schools Outdoor and Environmental
Education Center
6200 Parkway East
Linglestown, PA 17112

Barry R. Patterson, Coordinator

Program Description

The Outdoor and Environmental Education Center of the Harrisburg City Schools has been in operation for a total of 10 years in two locations. It's presently located at Camp Sertoma in Linglestown.

The program operates on a daily visit schedule with Grades 1 to 6. There are 86 acres of forested land on the south face of Blue Mountain, north of Harrisburg.

The 1st, 2nd and 3rd grades are bused to the OEEC from their classrooms for half-day visits. The 4th and 5th grades are bused to the OEEC for full days. The staff consists of five instructors and a coordinator, plus an aide whose duties vary from preparing lunches to helping instructors in the classes.

The curriculum includes classes in invertebrate and vertebrate animals; seeds; weather; survival; woodcutting; hiking; plant and animal identification; wildlife management; land management; fire-building and photosynthesis.

Londonderry Elementary Sechool
260 Schoolhouse Road
Middletown, PA 17057

Wendell Poppy, Principal

Program Description

In addition to the classroom instructional activities there is a week-long residential outdoor education program for 5th grade students. The program is in its eighth year at Londonderry and is now a districtwide project. It involves high school students from Lower Dauphin High School. Each elementary school runs its own weeklong program.

Lower Milford Outdoor Conservation and Education Center
Lower Milford School
Box 567, R. D. 2
Coppersburg, PA 18036

John H. Leeser

Program Description

The site, adjoining Lower Milford school, contains a forest, shrubs, ferns, a marsh, and a stream, among other things.

For the past four years 5th graders have been blazing a trail through the center, researched various plant and tree species, prepared reports and recorded speeches on tape. The recordings coincide with a series of wooden markers that identify various plants and trees along the trail.

Parkland School District
Kratzer School
2200 Main Blvd.
Allentown, PA 18104

Edward Davis, Project Director

Program Description

The general objective of this program is to design and implement a sequential interdisciplinary environmental education program K-12 in the Parkland School District.

The specific objectives of the program are:

1. Hands-on in-service training to help professional staff develop competencies for teaching environmental concepts.

2. Two environmental education study sites

3. Curriculum guides with interdisciplinary activities directed at environmental concerns of Parkland, with special emphasis on each immediate school community.

During the first year approximately 40 volunteer staff members participated in 39 hours of in-service training provided by Nolde State Park Environmental Education Center and Grant White, a local ecologist. The activities emphasized:

1. environmental awareness
2. ecological concepts
3. local environmental problems
4. identifying appropriate activities through involvement
5. developing teaching units
6. knowledge of community resources
7. participation in simulation games
8. utilization of study sites
9. teaching methodology
10. implementation at the building level

The in-service model will be completed during the second year (four months) with emphasis on the following activities:

1. group interaction and action socialization
2. promoting involvement of follow teachers and school community volunteers
3. urban and rural studies
4. field experiences with children
5. additional experiences at study site

Two environmental areas are being developed by participating staff and students. These activities include site survey inventories, planning, construction (trails, signs, picnic tables, and interest areas), and designing of activities. The natural state of the areas will not be altered to any great extent, except where improvements must be made to deal with erosion.

Students and teachers will be involved in providing appropriate information for developing curriculum guides through the review and selection of appropriate media materials and through input from classroom activities and pilot studies. The curriculum guides will contain activities directed towards the environmental concerns of Parkland's students and more specifically their immediate school community. Attached to the guide will be a booklet listing local physical resources for the student and teacher to use in studying the environment.

Penns Valley Area School District
Penns Valley High School
R. D. 2
Spring Mills, PA 16875

John Thompsen, Contact Persor.

Program Description

The present program consists of the following parts:

1. Environmental Days - In 1969 a Conservation Day was established for all sixth grade students in the district. Designed primarily to acquaint these students with the Penns Valley Area Environmental Center, it was continued each year up to 1974. During the 1974-75 school year the program was expanded to involve some teachers and students. An Environmental Day, for 5th, 6th and 7th grade students, consisted of a full day of instruction at the Environmental Center. In addition, other elementary students were transported to the center. The program will be expanded even more to include ali students in grades 1 through 9. Students from grades 10 through 12 serve as aides to teachers in the instructional program.

2. Environmental Instruction - An attempt had been made to integrate environmental lessons into every grade level and subject area in the Penns Valley Area School District. Using the Penns Valley Area School District environmental curriculum guide (grades K to 12), teachers are encouraged to develop self-contained lessons which can be incorporated into their present instruction.

3. Formal courses in environmental studies have also been established. Stressing pollution studies, these courses are being taught as nine week mini-courses in the social studies department.

Student-Centered Ecology Program
Penncrest School District
Mook Road
Saegertown, PA 16433

William Wilson, Contact Person

Program Description

Randolph-East Mead is a rural school in an economically depressed area on the fringe area of Appalachia. A great number of students are culturally and economically deprived and a high number are not academically oriented. Therefore, there was a need for science programs to give nonacademic students an opportunity to become aware of their environment and to be able to improve some things in their environment by means of experience in the environment itself. This program involves a student-centered laboratory experience without textbooks, in which the teacher serves as a facilitator of resource materials. The students contract with the teacher as to their areas of interest, what they want to investigate. The investigation will be evaluated.

This program has the following objectives:

(a) Students' awareness of their environment.

(b) An awareness of the scientific method of experimentation.

(c) An awareness of various potential occupational opportunities.

(d) Giving students an opportunity to make their own choices as to subject interest and to develop the ability to master their potential.

(e) Giving all students an opportunity to achieve through methods other than traditional.

(f) Giving students responsibility and opportunity for self-evaluation through contact.

(g) Giving students a greater opportunity for motivation through flexibility in schedules.

(h) Developing a positive attitude in students through success induced by innovative teaching methods in the classroom.

(i) To stimulating students to investigate related areas, such as math, politics, economics, history and English.

As a result an open classroom was developed; library facilities and audiovisual materials were greatly increased; and community resources were developed. The community has become aware through work with Erie Wildlife Refuge, E.P.A. (Meadville), public utilities, various manufacturing sites in Meadville and Erie.

Activities:

The following types of activities were conducted to reach the goals:

1. Field trips – going to a wildlife refuge, beaches at Lake Erie, sewage and refuse treatment plants in Meadville, manufacturing areas, agriculture centers.

2. Basic research and experimentation – water pollution, air pollution, soil erosion, soil analysis, population controls, identification of plants and animals in a specific ecology system, general ecological relationships, celluar changes, pesticides, hebicides, plant and animal growth requirements.

3. Use of audiovisual resource center for photography, preparation of slides, preparation of video tapes for classroom use, transparencies for overhead projector, prepared slides, movies.

4. Coordination of small-group investigation and discussions as well as panel discussions.

5. Science fair – to give students an opportunity to display their words and receive recognition on a local, regional and state level.

6. Individual contracts developing individual interest.

Approximately 75 students took part in the project. All of the Science Department of the Randolph High School were directly involved; because of interest generated almost all of the faculty became involved periodically. The entire high school was given an in-service the first year as to what the program hoped to accomplish and how people could help develop the program to the fullest.

Many local resource people were used: the head of the Erie National Wildlife Refuge, public health personnel, college professors and environmental specialists.

All one needs to tour the Lower Milford site is the tape recorder. A person simply starts the recorder at the trail's beginning and receives a complete guided tour of the outdoor center by following the tape's instructions.

All work has been done by the students, with guidance of John H. Leeser, 5th grade teacher, and John Yeager, principal.

Shikellamy School District
Fourth & Hanover Streets
Northumberland, PA 17857

George E. Wiser, Contact Person

Program Description

The Shikellamy Environmental Education Project consists of various curriculum materials developed and instituted by Shikellamy Area School District instructors during the Title III Project. Materials and activities include:

1. A satellite resource filing system of free or inexpensive environmental education materials.

2. Several hundred environmental concepts with suggested activities for the elementary level, placed topically into booklets.

3. Mini-courses in environmental studies on ecology, entomology, field mathematics, survival, field botany, and conservation, written for use in the senior high school curriculum.

4. A one week of fifth-grade outdoor education experience, has been further developed.

5. Each curriculum area - art, creative arts, language arts, business education etc., - developed an approach to environmental education through their curriculum studies.

6. A listing of environmental education films, compiled from other lists.

7. Audiovisual presentations describing the total project and facets of the project, available for loan.

8. Booklets describing items 1-6, available for distribution.

Contact person: George E. Weiser
C. W. Rice Middle School
Shikellamy Area School District
4th and Hanover St.
Northumberland, PA 17857

Sites for Environmental Education Development (SEED)
Colonial Northampton Intermediate Unit #20
Northampton County Conservation District
Courthouse 2857 Nazareth Road
Easton, PA 18042

Roslyn Kahler, Project Director

Program Description

Forty-eight teachers of grades 5, 6, 7, 8, 9 and 10, involved in a series of developmental workshops, received classroom and field experiences from environmental agencies cooperating with the Conservation District. The professionals have developed a curriculum guide of scientific, mathematical, natural, language art, artistic and historical education awareness materials. The SEED guide provides for lesson plans pre- and post-field trip activities and student response sheets. The guide was developed for use with the environmental education side at Jacobsburg State Park. The teachers completed a survey of vegetation in the State Park.

Fifteen school sites are being developed. Teams of four or five teachers from a school have been involved in a series of workshops presented by the staff of Nolde Environmental Education Center. Teacher teams survey each local school and develop an environmental education program for each school's site. Each team adapts learning materials, creates the facilities and develops a program for an environmental education program on its own school site.

Center for Air Environment Studies
The Pennsylvania State University
226 Fenske Laboratory
University Park, PA 16801

Program Description

The graduate program in air polluction control offered through the Center for Air Environment Studies of The Pennsylvania State University is based on the concept that air pollution is a field of interest to many professions rather than being a unique professional field. In keeping with this concept, a graduate student enrolls in an academic department of the university, completes the major requirements of that department, and minors in air pollution control. The air pollution minor involves completing a course sequence of air pollution and related topics and writing a thesis on an air pollution problem. Some of the courses available to students are air pollution seminars, introduction to air pollution control, small particle technology, air pollutants from combustion sources, atmospheric turbulence, introduction to micrometerology, environmental pathology, physiology of pulmonary respiration, design of air pollution control equipment, and environmental health.

The Center for Air Environment Studies is an intercollege unit of the university and does not grant degrees. It is necessary to apply to and be accepted by the graduate school (308 Kern Graduate Building) and an academic department of the university.

Center for Marine and Environmental Studies
Lehigh University
Williams Hall 31
Bethlehem, PA 18015

James M. Parks, Director

Program Description

The program of the Center for Marine and Environmental Studies (CMES) primarily concerns graduate student and faculty research. Areas of research, determined by the interests of faculty members and availability of funds, include:

1. Ecology of coastal salt marshes (our Wetlands Institute near Stone Harbor, N.J.).
2. Sea Floor foundation studies (continental shelf and deep sea), in our Marine Geothechnical Laboratory on campus.
3. Near-shore and continental shelf marine geology studies.
4. Beneficial uses of marine dredge spoils.
5. Municipal and idustrial waste water treatment process improvement.
6. Environmental dynamics (tornadoes, squall lines, tsunamis, computer simulations).
7. Proteolytic enzymes of marine bacteria.

COLLEGE/UNIVERSITY PROGRAMS

Pennsylvania State University
University Park, PA 16802

Betty van der Smissen

Program Description

ENVIRONMENTAL EDUCATION ACTIVITIES AT PENN STATE

This report of the environmental education activities at Penn State is divided into two primary divisions. The first relating to the academic program includes the curriculum, the endorsement program, continuing education, special workshops, and special projects within the community. The second focuses on those programs and services provided through the Stone Valley Recreation Area, specifically the resident program, the day-use program and the public recreation program.

I. ACADEMIC PROGRAM

Curriculum

The recreation and parks program in the College of Health, Physical Education, and Recreation offers academic degrees at all levels: baccalaureate, master's and doctorate. At each of these levels there is an area of specialization or option for the outdoor-related recreation programs. One emphasis is environmental education. For Attachment 1, the curriculum for the baccalaureate degree from the outdoor option is stated in terms of the different courses recommended. Handbooks for both the undergraduate and graduate programs are available.

Particular emphasis is given to student experiences in the community, including statewide and out-of-state experiences. At the freshman level students obtain an exposure through field trips into various settings, including urban settings; at the sophomore level there is a direct leadership experience; for juniors and seniors there is a practicum similar to student teaching: For instance, senior students are placed in schools as well as in other agencies and institutions in communities in Pennsylvania and outside the state.

In addition, class projects relate theory and practical applications. One involves work with the Bald Eagle schools in the development of their environmental education program with students and in-service programs for teachers at each grade level. A second project was with the Soil Conservation Service at Lock Haven, where the class developed a prospectus for an extensive piece of private property adjacent to some state lands. The prospectus not only covered the physical features but also the cultural and scientific aspects of this area, with particular recommendation for environmental education activities by schools and clubs in the community. A third project was conducted at Allentown in connection with the Boys' Clubs and their camping program, visiting of their campsite and analysis based on American Camping Association Standards, and interviewing and obtaining other information from parents, campers and noncampers.

Continuing Education

The continuing education program is held at the Stone Valley Recreation Area and elsewhere in the Commonwealth. At Stone Valley two courses are specifically directed towards environmental education: one is referred to under the teacher endorsement program; the other is a one-week resident program for teachers experienced in environmental education.

George Ward, a full-time continuing education instructor, offers courses and consultant service in the environmental education field. Specifically, three types of programs are available through continuing education: (a) one-day in-service workshops which introduce teachers to environmental education, (b) a one-credit, two-day workshop which is a general orientation to environmental education, and (c) a three-credit, semester-long in-depth course dealing with outdoor education methods and materials. In addition, a workshop entitled *Biological Indicators of Water Quality* was held in cooperation with the College of Agriculture.

Stayer Research and Learning Center
Millersville State College
Millersville, PA 17551

Robert J. Labriola, Director

Program Description

During the past three years, the Educational Development Center has received special ESEA Title III funds to introduce *land-locked* students from upper elementary schools and junior-senior high schools in Pennsylvania to the Marine Science Consortium in Lewes, Delaware, and Wallops Island, Virginia. The staff at the consortium conducts special three day sessions for students.

The contact person for this project is:

Robert J. Labriola, Director
Stayer Research and Learning Center
Millersville State College
Millersville, PA 17551
(717) 872-5411, ext. 370

The Williamsport Area Community College
1005 W. Third St.
Williamsport, PA 17701

Joseph G. Sick, Director
Earth Science Division

Program Description

1. Interpretive trail - 75 per cent complete, still needs learning stations.
2. Diversion terraces, over 2,000 linear feet completed
3. Arboretum, contains over 400 trees and shrubs
4. Contour strips, installed
5. Deer exclosure, complete and fenced
6. Environmental pond, in the planning stage
7. Forest tree management plan, in the planning stage with some work completed
8. Play area, football, baseball fields completed
9. Picnic area, one 80 per cent completed
10. Equipment park completed

ENVIRONMENTAL LEARNING CENTER/NATURE CENTERS

Allegheny County Environmental Coalition
204 Fifth Ave.
Pittsburgh, PA 15222

Mary T. Bailey
Project Director

Program Description

Allegheny County Environmental Coalition's program currently includes two projects as well as our continuous effort to keep members and the public informed on environmental issues and activities. The major activity for two years has been Project ACCEPT, a public information program on mobile sources of air pollution and the Pittsburgh Transportation Control Strategy. This project is funded by a contract with the U.S. Environmental Protection Agency. Educational materials produced include a slide show and pamphlets (sample enclosed). We are not using the slide show at this time, however, because the strategy itself is inadequate and will undergo major revision this year.

ACEC's other project is the annual Earth Week effort. Each year since 1971, we have been designated by the Allegheny County Commissioners as the official coordinator for Earth Week activities in the County. In past years, we have worked closely with schools and youth organizations, encouraging them to plan environmental programs during April and assisting them with printed materials, visual aids and speakers. This year we are developing a program of simple tours in various locations throughout the county to acquaint students and adults with their own environment. These tours may include a visit to Alcosan, a steel mill, county parks and recycling centers and a walk in the urban environment. We hope to coordinate these tours with public transportation, bicycling and walking. Plans are not complete, but we are excited about the concept of using our local environment as a classroom.

McKeever Environmental Learning Center
Box 121, R. D. 3
Sandy Lake, PA 16145

Richard Touvell, Director

Program Description

In 1974, Ivan McKeever and six local Sandy Lake residents (members of the Sandy Creek Conservancy) had a dream. After a decade of planning and work the center is now a reality and ready to serve the public.

The facility is owned by the Pennsylvania taxpayer and is coordinated by a board of commissioners representing numerous groups. Day-to-day operation is guided by a director, teacher naturalist, environmental educator, student teachers, work-study students and community volunteers. The center is open to all citizens.

The *McKeever facility* is a multi-disciplinary and multi-age environmental learning complex. Although the immediate service area for the center is western Pennsylvania, citizens throughout the Commonwealth and neighboring states are also benefiting from the center's programs.

The *physical facilities* include a 205-acre *living textbook* and eight buildings (dining hall, a 200-seat auditorium, three lodges which can accommodate 145 people, a director's residence,

a maintenance building and a discovery building housing a land-use room, plant and animal discovery room, staff offices and a library).

The *present staffing* includes a director, an environmental educator, an interpretive naturalist, a maintenance repairman I, a clerk-typist and four federally funded CET employees in the capacity of custodians.

The *programming* is exciting, innovative and relevant. Programs include a three-day resident-living experience for elementary students (*How to be an Earthkeeper*), diverse social, political and economic investigations of our environmental problems for high school and college students; and adult/general public education opportunities, i.e., energy park forums, alternative energy source workshops and guest speakers. Sample schedules are attached.

The Schuylkill Valley Nature Center
8480 Hagy's Mill Road
Philadelphia, PA 19128

Richard L. James, Executive Director

Program Description

The Schuylkill Valley Nature Center for Environmental Sciences in Philadelphia is a nonprofit institution. Its 360 acres today support a large population of small native animals. In the past it was plowed, lumbered and quarried. If former residents came back to visit, they might find that some of their paths and roads are now trails, that some of the fields they planted are still open land, that the ravines are much as they would remember them. New, however, would be the spacious education building, with its classrooms, auditorium, library and hands-on discovery room. Certainly former residents would marvel at the Widener Trail (intentionally made available to people in wheelchairs) and its electronic trail guide system. In the past Indians, with their respect for the land and their knowledge of its inhabitants, the geologists, the farmers and their capable wives, the estate gardeners, would have had something to contribute to the center. For the modern family, there are spider webs, classes, workshops, graduate courses, and organic garden plots, plus an opportunity to become part of the center as a member or volunteer.

Western Pennsylvania Conservancy
204 Fifth Ave.
Pittsburg, PA 15222

Paul C. Wiegman

Program Description

Members' programs - Walks throughout the year on lands owned by Western Pennsylvania Conservancy. Annual program in May.

Workshops - Workshops for members and nonmembers are held in conjunction with Carnegie Museum. This year the schedule is as follows:

May	-	Wetlands
June	-	Forests
July	-	Flowing water
Sept.	-	Fields and meadows

Family-oriented, two-day programs introduce groups to the varied natural land in this region. Emphasis is given to interrelationships of the natural environment.

Two workshops were held to introduce beginners to canoeing and backpacking. Again, they are two-session workshops, one indoors for instruction, the other at a selected field locality.

Publications - Several Handbooks deal with natural areas in western Pennsylvania.